

TITLE: INNOVATIVE GAS MONITORING WITH SPACIAL AND TEMPORAL ANALYSIS

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of provisional application number 60/481,266 filed August 20, 2003.

FIELD OF THE INVENTION

[0002] The present invention relates to gas monitoring, and more particularly to methods for determining sources of emissions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0003] Reference will now be made to the accompanying drawings which show, by way of example, embodiments according to the present invention and in which:

[0004] Fig. 1 shows in graphical form exemplary data collected over a three day period;

[0005] Fig. 2 shows in graphical form data corrected for sensor baseline response and overlaid on the data of Fig. 1;

[0006] Fig. 3 shows in graphical form data corrected for changing sensor sensitivity over time;

[0007] Fig. 4 shows in graphical form monitor predictions when multiple sensors are averaged;

[0008] Fig. 5 shows a plot of percent relative standard deviation versus H₂S concentration;

[0009] Fig. 6 shows a plot of the output of five sensors working in a synchronized mode of operation;

[00010] Fig. 7 shows a plot of a sample cycle for one sensor exposed to H₂S;

- [00011] Fig. 8 shows a plot of a sample cycle for a sensor exposed to another concentration of H₂S;
- [00012] Fig. 9 shows a plot of the comparison between the H₂S filter mode and the baseline calibration;
- [00013] Fig. 10 shows a plot of logarithmic fitted curves for sensor outputs;
- [00014] Fig. 11 shows in schematic form a monitor according to an embodiment;
- [00015] Fig. 12 shows a plot of an exemplary measurement cycle;
- [00016] Fig. 13 shows a plot of another exemplary measurement cycle;
- [00017] Fig. 14 shows in graphical form an exemplary three dimensional plot for measurements;
- [00018] Fig. 15 shows in graphical form another exemplary three dimensional plot;
- [00019] Fig. 16 shows in graphical form another exemplary three dimensional plot; and
- [00020] Fig. 17 shows an exemplary arrangement for a sensor array and source location method according to an embodiment.